

that the pair of first sockets and the first coupling member form a relatively rotatable ball and socket joint in the first position of the bifurcated arm assembly,

the clamping means being operable in the first position of the bifurcated arm assembly to squeeze the pair of arm sections further together relatively crosswise the plane of the line of juncture and to a second position of the bifurcated arm assembly in which the inner peripheral surfaces of the first sockets assume a disposition relatively radially within the circle of revolution, and the first coupling member being sufficiently radially compressible at the outer peripheral surface thereof that between the first and second positions of the bifurcated arm assembly, the inner peripheral surfaces of the first sockets can deform the surface of the first coupling member to interlock the bifurcated arm assembly with the first coupling member and vice versa at a selected angular orientation of the line of juncture with respect to the one object, and

means for producing a differential in the reaction of the respective pairs of first and second end portions of the arm sections to the further squeezing action of the clamping means, so that when squeezed further together into the second position of the bifurcated arm assembly, the pair of arm sections pivots relatively toward one another about the first coupling member to seize the base and rigidly interconnect the bifurcated arm assembly with the base at the selected angular orientation of the line of juncture with respect to the one object.

2. (original) The mounting device according to claim 1 wherein the clamping means are releasable and when the clamping means are released, the pair of arm sections is reciprocable in relation to one another to a third position of the bifurcated arm assembly in which the pair of arm sections is sufficiently spaced apart about the first locus of the first coupling member that the first coupling member is detachable from the bifurcated arm assembly and vice versa.

3. (original) The mounting device according to claim 2 wherein the base takes the form of a second coupling member having a substantially smooth part spherical outer peripheral surface thereon, the second coupling member is also compressible radially thereof at the outer peripheral surface thereof, and the mounting device further comprises means forming a pair of operatively opposing second sockets in the second end portions of the pair of arm sections which have substantially smooth part spherical surfaces at the inner peripheries thereof that are rotatably

engageable with the second coupling member at the outer peripheral surface thereof in the respective positions of the bifurcated arm assembly lying between the third and first positions thereof inclusive, and which progressively seize the second coupling member by compressing and deforming the outer peripheral surface thereof to interlock the bifurcated arm assembly with the second coupling member when the pair of arm sections is squeezed together in the direction of the second position of the bifurcated arm assembly from the first position thereof.

4. (original) The mounting device according to claim 1 wherein the base and arm sections are adapted for rotation of the bifurcated arm assembly about the base and vice versa at the second locus of the base.

5. (original) A mounting device for interposing along a line of juncture between a pair of relatively movable and relatively stationary objects, to support the relatively movable object on the relatively stationary object at a selected angular orientation of the line of juncture with respect to one of the objects, comprising:

means for forming a first coupling member on a first of the objects and a base on a second of the objects at spaced first and second loci, respectively, adjacent opposite ends of the line of juncture,

a split arm assembly comprising a pair of elongated relatively rigid arm sections which are operatively juxtaposed to one another along the line of juncture between the spaced first and second loci of the first coupling member and the base, and have pairs of corresponding first and second end portions thereof that are operatively opposed to one another across a plane coincident with the line of juncture,

the first coupling member having a body with part spherical surfaces at the outer periphery thereof that are disposed on opposite sides of the plane of the line of juncture to substantially coincide with a first circle of revolution having its center at the first locus of the first coupling member, and also having pressure deformable material therein so that the body of the first coupling member can be squeezed between the surfaces thereof to less than the diameter of the first circle of revolution,

means forming a pair of operatively opposing first sockets in the pair of first end portions of the respective arm sections,

means for applying initial clamping forces to the pair of arm sections to squeeze the pair of arm sections together relatively crosswise the plane of the line of juncture,

means for producing a differential in the reaction of the respective pairs of first and second end portions of the arm sections to the initial clamping forces so that when squeezed together, the pair of arm sections assumes a relatively transversely contracted disposition thereof about the first coupling member and the base in which the pair of first sockets in the pair of first end portions is operatively engaged about the outer peripheral surfaces of the first coupling member in substantial coincidence with the first circle of revolution, but the pair of second end portions is spaced apart from one another about the base to the extent that although the pair of arm sections forms a connection between the first coupling member and the base, the connection allows the pair of arm sections to be squeezed further together about the base,

the pair of first sockets being adapted to form a first ball and socket joint with the outer peripheral surfaces of the first coupling member when the pair of arm sections assumes the relatively transversely contracted disposition thereof about the first coupling member and the base, so that the first coupling member and the pair of arm sections can be pivoted in relation to one another at the first joint to position the line of juncture at a selected angular orientation with respect to the one object,

means for applying additional clamping forces to the pair of arm sections to squeeze the pair of arm sections further together

relatively crosswise the plane of the line of juncture when the pair of arm sections is in the relatively transversely contracted disposition thereof about the first coupling member and the base, and

means for producing a differential in the reaction of the respective pairs of first and second end portions of the arm sections to the additional clamping forces so that when squeezed further together in the relatively transversely contracted disposition thereof, the pair of arm sections pivots in relation to one another about the first coupling member to reduce the space between the second end portions of the respective arm sections about the base while the pair of first sockets engages the

outer peripheral surfaces of the body of the first coupling member to squeeze the body therebetween and interlock the pair of arm sections with the first coupling member to rigidify the connection between the first coupling member and the base at the selected angular orientation of the line of juncture with respect to the one object.

6. (original) The mounting device according to claim 5 wherein the first coupling member is formed of nitrile rubber material at the surface thereof.

7. (original) The mounting device according to claim 5 wherein the pair of arm sections is adapted to extend rectilinearly between the spaced first and second loci of the first coupling member and the base.

8. (original) The mounting device according to claim 5 wherein the means for forming the first coupling member and the base are elements physically separate and distinct from the objects themselves but attachable thereto.

9. (original) The mounting device according to claim 5 wherein the split arm assembly is physically separate and distinct from the means for forming each of the first coupling member and the base.

10. (original) The mounting device according to claim 5 wherein the split arm assembly is physically separate and distinct from the base.

11. (original) The mounting device according to claim 5 wherein the pressure deformable material is resilient and the means for applying additional clamping forces to the pair of arms sections are releasable relatively crosswise the plane of the line of juncture to restore the first joint so that the pair of arm sections and the first coupling member can be pivoted in relation to one another to position the line of juncture at a different angular orientation with respect to the one object.

12. (original) The mounting device according to claim 5 wherein the base has attachment means thereon for forming the connection between the first coupling member and the





17. (original) The mounting device according to claim 16 wherein the differential producing means include yieldable biasing means and the space between the first and second loci of the first coupling member and the base respectively is of such length that when the second coupling member is detached from the split arm assembly and vice versa, the pair of arm sections can be pinched together against the bias of the biasing means to separate the pair of first sockets from one another to the extent that the first coupling member can be detached from the pair of arm sections and vice versa.

18. (original) The mounting device according to claim 5 wherein the means for producing a differential in the reaction of the respective pairs of first and second end portions of the arm sections to the initial clamping forces include means operable to generate a lop-sided effect in the application of the initial clamping forces to the respective pairs of first and second end portions of the arm sections when the pair of arm sections is squeezed together to assume the relatively transversely contracted disposition thereof.

19. (original) The mounting device according to claim 5 wherein the base has attachment means thereon for forming the connection between the first coupling member and the base, and the attachment means and the first coupling member have means operatively interposed therebetween to generate a lop-sided effect in the application of the initial clamping forces to the respective pairs of first and second end portions of the arm sections when the pair of arm sections is squeezed together to assume the relatively transversely contracted disposition thereof.

20. (original) The mounting device according to claim 19 wherein the attachment means include a second coupling member having a body with part spherical surfaces at the outer periphery thereof that are disposed on opposite sides of the plane of the line of juncture to substantially coincide with a second circle of revolution having its center at a point interposed between the second end portions of the arm sections when the pair of arm sections is squeezed together to assume the relatively transversely contracted disposition thereof, the first and second circles of revolution have substantially equal diameters, and the means for generating a lop-sided effect in the application of the initial clamping forces to the respective first and second end portions of the arm

sections include yieldable biasing means disposed to oppose the application of the initial clamping forces to the second end portions of the respective arm sections.

21. (original) The mounting device according to claim 20 wherein the yieldable biasing means are interposed across the plane of the line of juncture between the first and second coupling members.

22. (original) The mounting device according to clam 21 wherein the initial clamping forces are applied to the pair of arm sections along a line interposed across the plane of the line of juncture between the yieldable biasing means and the first coupling member.

23. (original) The mounting device according to claim 22 wherein the yieldable biasing means take the form of a coiled spring which is caged between the pair of arm sections along a line interposed across the plane of the line of juncture substantially parallel to the line of application of the initial clamping forces.

24. (original) The mounting device according to claim 20 wherein the arm sections are operatively juxtaposed about the plane of the line of juncture so that when the pair of arm sections is squeezed together by the initial clamping forces, the second end portions of the pair of arm sections are reciprocated against the bias of the yieldable biasing means to positions mutually opposed to one another across the plane and in which the second coupling member forms a connection between the first coupling member and the base, but the pair of second end portions is sufficiently spaced apart from one another in the connection that the connection allows the pair of arm sections to be squeezed further together about the base.

25. (original) The mounting device according to claim 20 wherein the space between the first and second loci of the first coupling member and the base respectively, is of such length that when the second coupling member is detached from the split arm assembly and vice versa, the pair of arm sections can be pinched together against the bias of the biasing means to separate the first end portions of the arm sections from one another to the extent that the first coupling member can be detached from the pair of arm sections and vice versa.







coupling member to interlock the bifurcated arm assembly with the first coupling member and vice versa, but

the inner peripheral surfaces of the first sockets also being substantially smooth over sufficient arcuate extent circumferentially of the outer peripheral surface of the first coupling member and the first coupling member being sufficiently resilient at the surface thereof, that when the clamping means are released, the pair of first sockets and the first coupling member reform a relatively rotatable ball and socket joint at the first position of the bifurcated arm assembly, so that the bifurcated arm assembly can be rotated about the first coupling member to vary the angular orientation of the line of juncture with respect to the first coupling member,

and wherein when the clamping means are released, the pair of arm sections are reciprocable in relation to one another to a third position of the bifurcated arm assembly in which the faces of the pair of arm sections are sufficiently spaced apart about the first locus of the first coupling member that the first coupling member is detachable from the bifurcated arm assembly and vice versa,

and the base takes the form of a second coupling member having a substantially smooth part spherical surface thereon which forms the outer periphery thereof, the second coupling member is also compressible radially thereof at the outer peripheral surface thereof, and the mounting device further comprises means forming a pair of operatively opposing second sockets in the faces of the respective arm sections which have substantially smooth part spherical surfaces at the inner peripheries thereof that are rotatably engageable with the second coupling member at the outer peripheral surface thereof in the respective positions of the bifurcated arm assembly lying between the third and first positions thereof inclusive, and which progressively seize the second coupling member by compressing and deforming the surface thereof to interlock the bifurcated arm assembly with the second coupling member when the pair of arm sections are reciprocated in relation to one another in the direction of the second position of the bifurcated arm assembly from the first position thereof.

31. (original) The mounting device according to claim 30 wherein the releasable clamping means include yieldable biasing means operable to space the pair of arm sections from one another at the faces thereof relatively crosswise the plane of the line of juncture, and a





















61. (Amended): An interlocking ball and socket joint comprising:

a coupling member having a radially compressible material formed in a substantially unbroken spherical shape ~~having an uncompressed outer diameter and formed around a relatively rigid core~~ having a projection extending outside of the spherical shape ~~unconstrained diameter~~;

an rigid arm assembly formed of ~~respective~~ at least two arm sections having sockets formed in opposing interior surfaces thereof, the sockets each having substantially smooth concave surfaces ~~coextending with a portion of the uncompressed outer diameter of the spherical portion of the coupling member~~, the sockets having rims formed thereabout at the surfaces of the respective arm sections and one of the sockets having an indentation formed therein which is greater in width than the projection of the coupling member so that the arm assembly is rotatable about the coupling member to angular orientations in which the arm assembly extends at ~~an~~ a right angle to the projection of the coupling member; and

an adjustable clamp mechanically attached to the respective arm sections and configured and arranged to position ~~subsequently positioning~~ the sockets in a plurality of opposing relationships to one another,

one adjustment of the clamp positioning the sockets in an opposing relationship on either side of the coupling member and relatively rotatable thereto, and

another adjustment of the clamp positioning the sockets in an opposing relationship on either side of the coupling member and compressing the radially compressible material thereof; ~~whereby the sockets~~ to interlock the sockets with the coupling member in a relative angular orientation.

62. The interlocking ball and socket joint of claim 43 wherein the coupling member is substantially centered on a first locus; and

the first and second arm sections form a bifurcated arm assembly having an apex at a second locus spaced apart from the first locus and having the first sockets substantially centered on the first locus and engaged about the coupling member.





member so that the arm sections can be rotated about the coupling member to angular orientations in which the arm sections extend at a right angle to the neck of the coupling member; and

an adjustable clamp coupled to at least two of the plurality of arm sections, the adjustable clamp being configured and arranged to provide a plurality of positions, wherein, in a first position of the adjustable clamp, the first sockets and first coupling member are rotatably engaged, and in a second position of the adjustable clamp, the first sockets and first coupling member are interlocked, with the first sockets deforming the resilient deformable material of the head of the first coupling member.

71. (New) The mounting device of claim 70, wherein the arm sections are not all identically shaped.

72. (New) The mounting device of claim 70, wherein the first sockets are two opposing first sockets.

73. (New) The mounting device of claim 70, wherein a first one of the arm sections is smaller than a second one of the arm sections and wherein the first one and the second one of the arm sections form the first sockets.

74. (New) The mounting device of claim 73, wherein the first one of the arm sections is hingedly secured to the second one of the arm sections.

75. (New) The mounting device of claim 70, wherein the mounting device comprises at least three arm sections.

76. (New) The mounting device of claim 70, wherein at least one of the arm sections comprises a reduced diameter waist.

77. (New) The mounting device of claim 76, wherein each of the arm sections comprises a reduced diameter waist.



78. (New) The mounting device of claim 70, wherein the mounting device comprises a reduced diameter waist.

79. (New) The mounting device of claim 78, wherein a diameter of at least one of the arm sections continuously narrows from the first socket to a center region to form, at least in part, the reduced diameter waist of the mounting device.

80. (New) The mounting device of claim 79, wherein a diameter of each of the arm sections continuously narrows from the first socket to a center region to form, at least in part, the reduced diameter waist of the mounting device.

81. (New) The mounting device of claim, 78, wherein the reduced diameter waist coincides with a position of the adjustable clamp.

82. (New) The mounting device of claim 70, wherein the resilient deformable material of the coupling member is an elastomeric material.

83. (New) The mounting device of claim 82, wherein the elastomeric material comprises nitrile rubber.

84. (New) The mounting device of claim 70, wherein the head of the coupling member has a Shore A durometer of between 30-100.

85. (New) The mounting device of claim 70, wherein the head of the coupling member has a Shore D hardness of between 40 and 70.

86. (New) The mounting device of claim 70, wherein the coupling member comprises a disc-shaped base coupled to the neck.

87. (New) The mounting device of claim 86, wherein the disc-shaped base of the coupling member defines three openings in the base forming an equilateral triangle.



adjusting the adjustable clamp so that the first sockets and first coupling member are interlocked, with the first sockets deforming the resilient deformable material of the head of the first coupling member, and the second sockets and second coupling member are interlocked, with the second sockets deforming the resilient deformable material of the head of the second coupling member.

92. (New) The method of claim 91, further comprising adjusting the adjustable clamp so that the first sockets and first coupling member are interlocked, with the first sockets deforming the resilient deformable material of the head of the first coupling member, and the second sockets and second coupling member are rotatably engaged.

93. (New) The method of claim 91, further comprising adjusting the adjustable clamp so that the first sockets and first coupling member are rotatably engaged, but the first coupling member is not removable from the first sockets, and then removing the second coupling member from the second sockets.

94. (New) A method of operating a mounting device, the method comprising:

providing a mounting device comprising

a first coupling member comprising a substantially spherical head and a neck extending from the head, the spherical head comprising a resilient deformable material;

a base comprising a second coupling member, the second coupling member comprising a substantially spherical head and a neck extending from the head, the spherical head comprising a resilient deformable material;

a plurality of arm sections, at least two of the arm sections forming first sockets at end portions of the respective arm sections and at least two of the arm sections forming second sockets at end portions of the respective arm sections, the first and second sockets comprising substantially smooth interior surfaces; and

adjusting the adjustable clamp so that the first sockets and first coupling member are rotatably engaged, wherein the first coupling member is not removable from the first sockets and the second coupling member is removable from the second sockets.